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**A public health challenge:
SIDS rates decline but postneonatal death rates
remain unchanged, Michigan, 2001-2003**

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Objectives

- To assess different data sources and thus understand the potential shift in infant deaths diagnosis;
- To present strategies for increasing knowledge and behavior change by creating multifaceted public and private partnership to continue the safe sleep campaign.



Presentation outline

- Background
- Use of the infant deaths linked file and analysis results
- PRAMS data analysis and findings
- Lessons learned/Public Health Implications

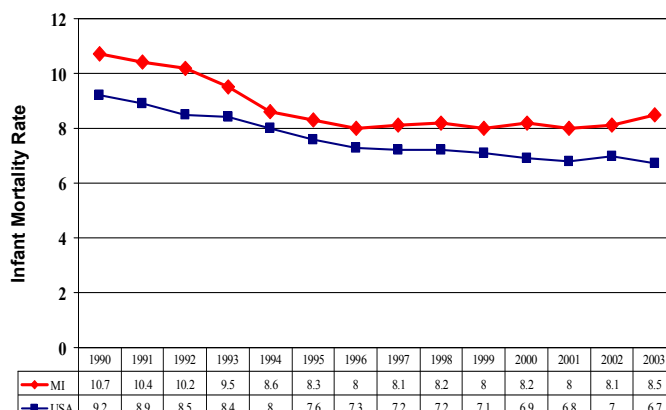


Background

- Michigan was unsuccessful in significantly reducing Infant Mortality from 1996-2003
- Persistently higher than U.S.



Infant Mortality Rate Michigan compared to U.S.



* 2003 National rate is preliminary



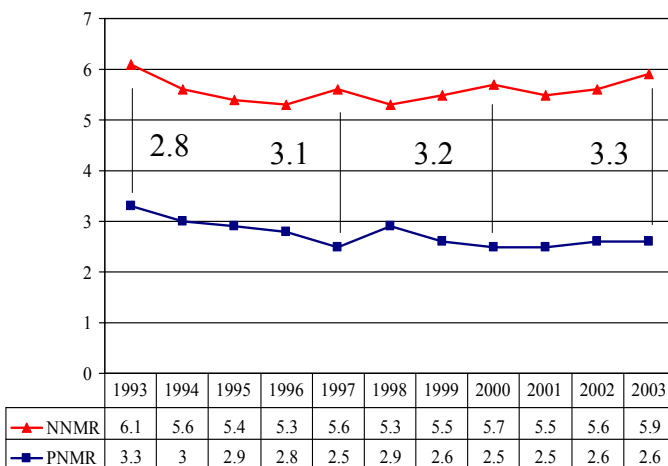
Background

- Michigan was unsuccessful in significantly reducing Infant Mortality from 1996-2003
- Persistently higher than U.S.
- Neonatal deaths rate recorded fluctuations from the highest of 6.1 in 1993 to the lowest of 5.3 in 1996 and 1998
- Steady postneonatal death rate from 1999 to 2003



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Neonatal Mortality Rate (NNMR) and Postneonatal Mortality Rate (PNMR)



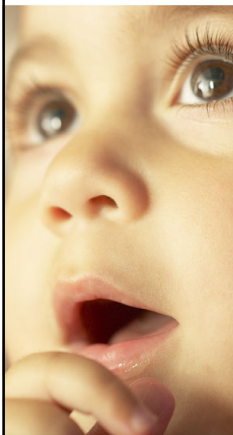
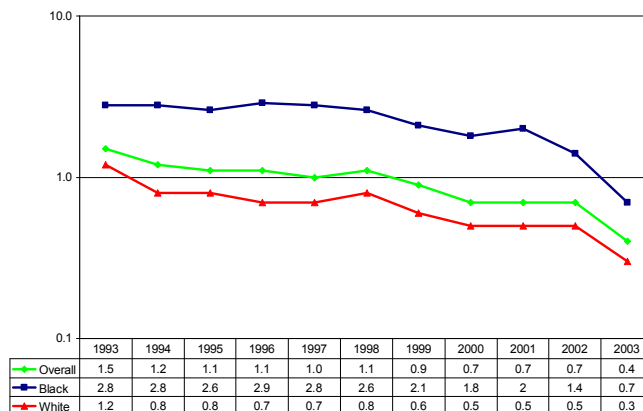
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Background

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- Persistently higher than U.S.
- Neonatal deaths rate recorded fluctuations from the highest of 6.1 in 1993 to the lowest of 5.3 in 1996 and 1998
- Steady postneonatal death rate from 1999 to 2003
- SIDS rates declined: 71% since 1994



Race specific Infant Mortality Rate due to SIDS Michigan, 1993-2003



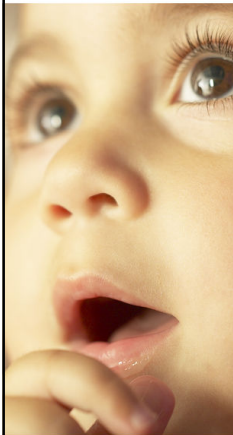
Where did SIDS go?

- SIDS: postneonatal death cause
- 2001-2003 data: steady postneonatal death rate but decrease in SIDS
- Explore further the potential shift in the deaths coding
- Decrease in SIDS may be explained by the increase in other death causes



Methods

- Data sources:
 - infant death linked file (death cohort linked with live births)
- ICD10 codes grouped (NCHS overall groupings considered)
- Excel and SAS 9.1 used for analysis

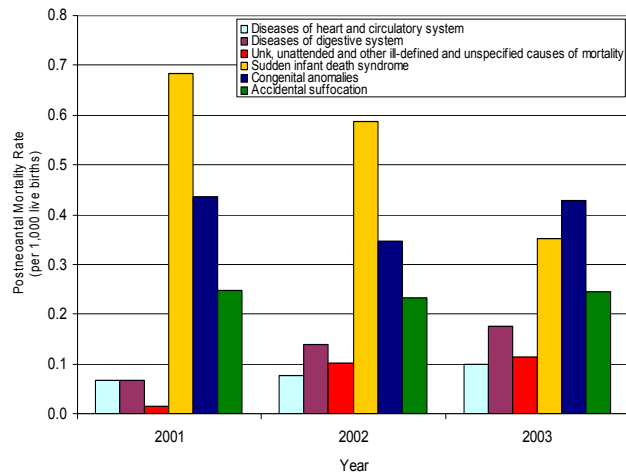


Results



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Causes of postneonatal deaths



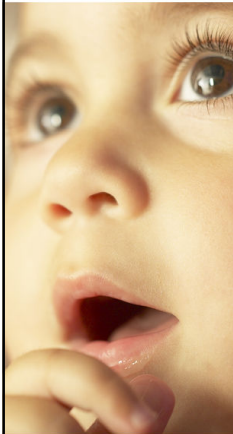
Vital Statistics Infant deaths linked file



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What is different in 2003 compared to 2001?

- 45 less SIDS
- More deaths in some groupings (digestive, heart and circulatory, unknown causes, etc.)
- Less deaths in other groupings (respiratory, etc.)
- Almost the same number of deaths caused by accidental suffocation in bed
- Simple math doesn't help understanding the shift



ICD10 codes for SIDS, suffocation and undetermined deaths (VS)

- Sudden Infants Death Syndrome (SIDS): R95.0-R95.9
- Accidents: V01.0-V99.9, W00.0-W99.9, X00.0-X59.9, Y85.0-Y86.9
- All other causes: residual codes (e.g. R96, R97, R98, R99)



Do we use the right codes?

		2001	2002	2003
		Postneonatal	Postneonatal	Postneonatal
R95	SIDS	91	76	46
R96	Other Sudden deaths, cause unk	0	0	0
R97	Unk cause	0	2	2
R98	Unattended death	1	0	0
R99	Other ill-defined and unspecified causes of mortality	1	10	12
W75	Accidental suffocation and strangulation in bed	33	30	32
W 78-79-80	Inhalation of gastric content, food or other objects	1	1	2
W 81	Confined to or trapped in a low oxygen environment	0	4	0
W 83-84	Other or unspecified threat to breathing	4	12	12
Y20	Hanging, strangulation and suffocation, undetermined intent	3	0	2
Y34	Unspecified event, undetermined intent	0	2	1





Strength/Limitation

- Use the linked file which allows further epidemiological analysis if needed
- ICD10 codes as accurate as possible
- ICD10 codes recorded in linked file may not “tell” the true story




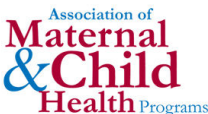
Conclusion/Discussion

- There is probably a shift in coding but difficult to explain
- Need to explore in more details:
 - more information about the death circumstances
 - thorough scene investigation
 - parents input
- Use other data sources when/if available
- Explore the infant sleep related behaviors



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2002 PRAMS Annual Report



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What is PRAMS?

- PRAMS: Pregnancy Risk Assessment Monitoring System
- Surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments
- Collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy
- Provides data for state health officials to use for improving the health of mothers and infants



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PRAMS Methodology

- PRAMS sample of women who have had a recent live birth is drawn from the state's birth certificate file
- Each participating state samples between 1,300 and 3,400 women per year
- Women from some groups are sampled at a higher rate to ensure adequate data are available in smaller but higher risk populations
- Selected women are first contacted by mail. If there is no response to repeated mailings, women are contacted and interviewed by telephone.
- Data collection procedures and instruments are standardized to allow comparisons between states.



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The PRAMS Questionnaire

- The original PRAMS questionnaire was developed in 1987
- Revised many times; the fifth phase implemented in April 2004
- The questionnaire consists of two parts:
 - core questions that appear on all states' surveys
 - state-added questions that are tailored to each state's needs:
 1. Standard questions developed by CDC (185)
 2. Questions developed by state



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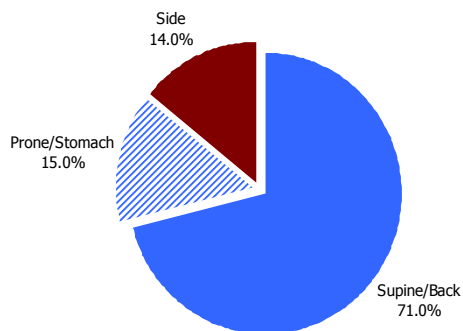
PRAMS question #54 (core question)

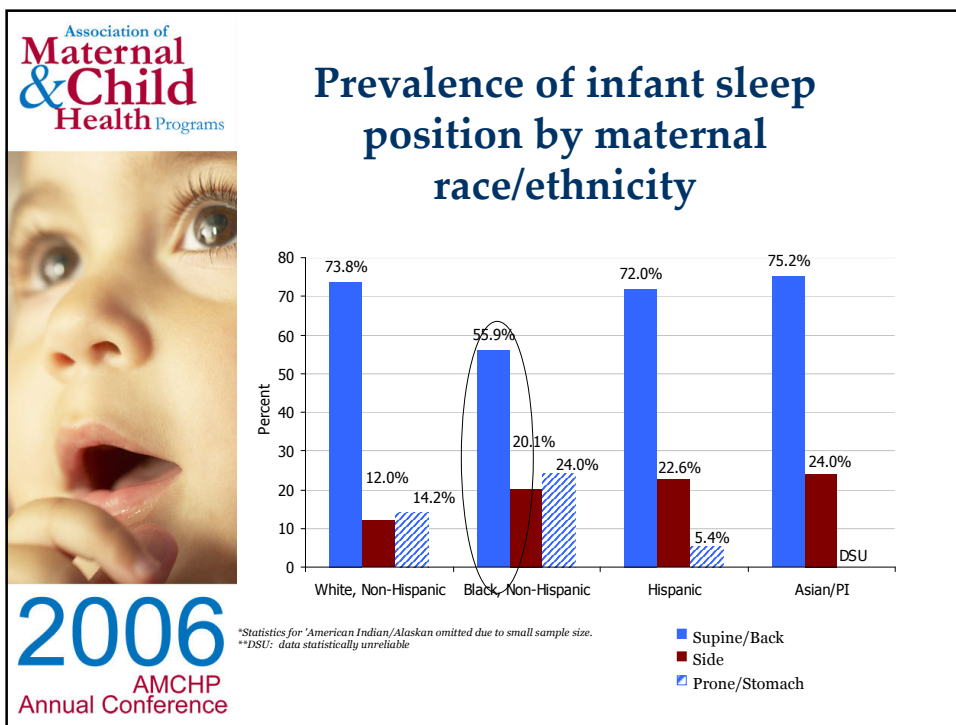
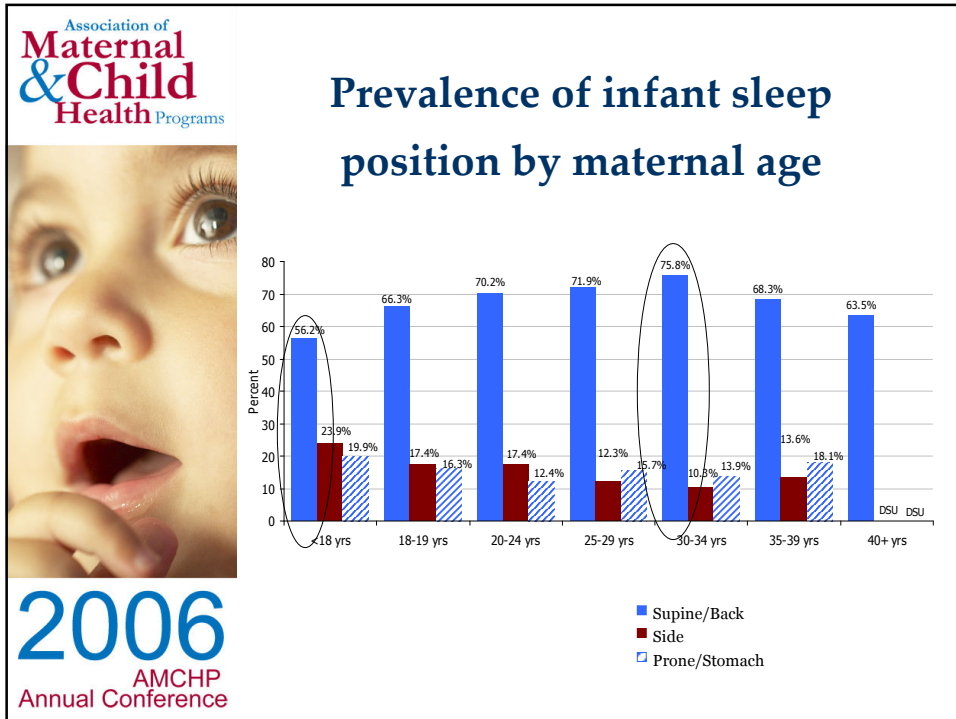
- *How do you most often lay your baby down to sleep now?*
 - _ On his or her side*
 - _ On his or her back*
 - _ On his or her stomach*

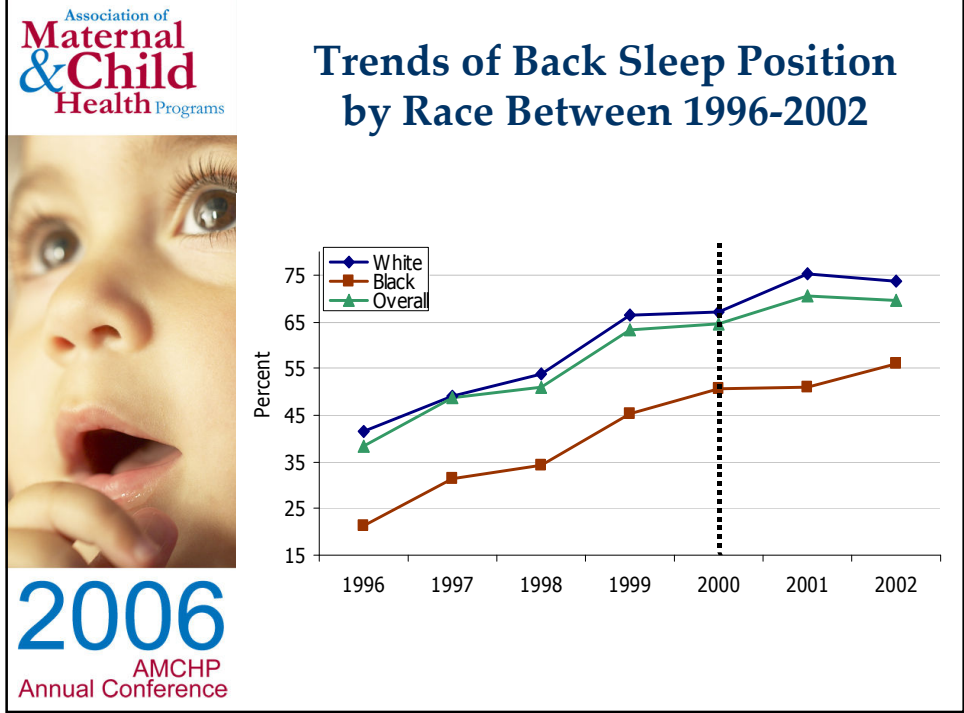


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Prevalence of infant sleep positions







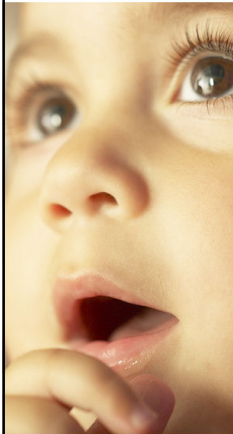
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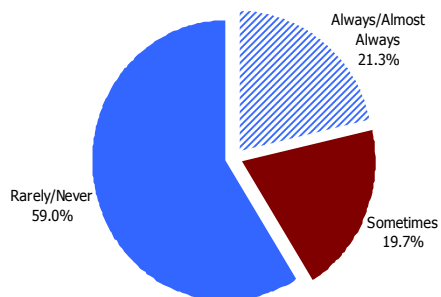
PRAMS question #55 (standard question)

- How often does your new baby sleep in the same bed with you or anyone else?
 - ☐ Always
 - ☐ Almost always
 - ☐ Sometimes
 - ☐ Rarely
 - ☐ Never



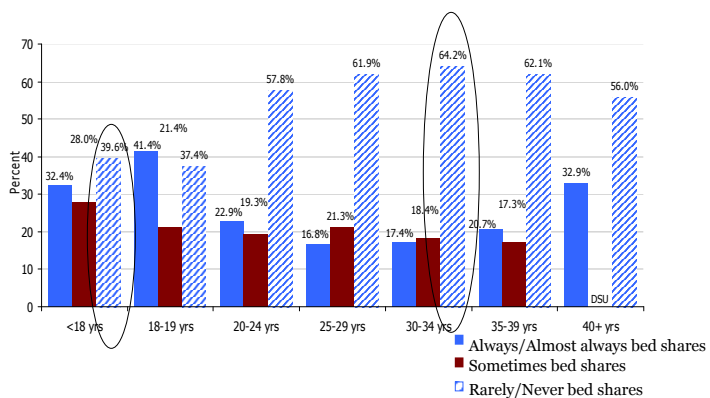
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Prevalence of infant bed sharing



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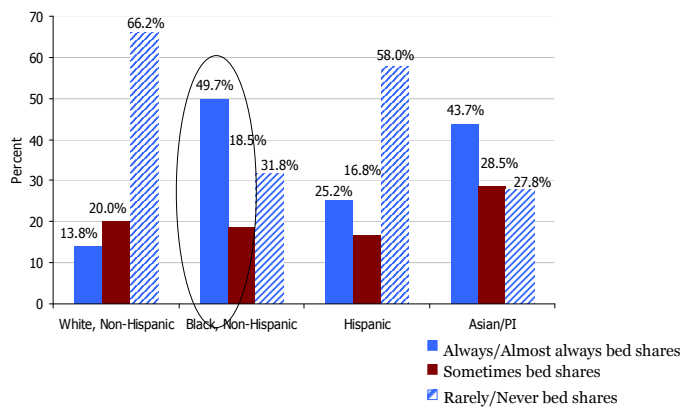
Prevalence of infant bed sharing by maternal age





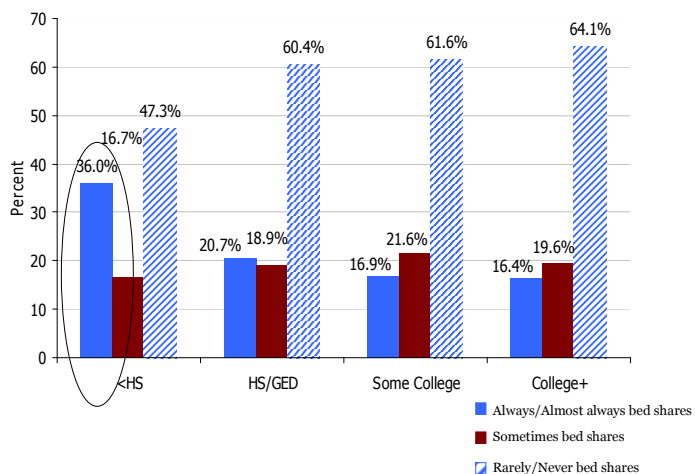
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Prevalence of infant bed sharing by maternal race/ethnicity



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Prevalence of infant bed sharing by maternal education





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Lessons learned/ Public Health Implications

- The 1994 “Back to Sleep” campaign in Michigan has changed (improved) the behavior of many mothers to put infants to sleep on their back
- However, the campaign needs to identify and address changes in the public health message, which will be more effective for very young, with less than a high school education and Non-Hispanic Black mothers
- MDCH should explore further the possibility of adding the “Back to Sleep” curriculum in the Michigan Model, School Health education and a strategy for working with teen health centers on safe sleep issues.



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Lessons learned/ Public Health Implications

- The new information gathered about the high prevalence of bed sharing in Michigan is a timely contribution to the planning for a statewide “Infant Safe Sleep” campaign sponsored by MDCH, MDHS, and MDE.
- Growing risk of sudden infant death associated with infants sleeping in unsafe arrangements recently reported by a work group
- Important ethnic and age appropriate considerations are needed to adequately target younger women to avoid the accidental suffocation risk associated with bed sharing.
- The high prevalence of this risky behavior demands rigorous study of the reasons behind the numbers, including qualitative evaluation of women’s stories.



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PRAMS coordinator

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Questions?